UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,001	11/01/2001	Wen Zhao	555255012288	7436

7590 12/22/2005	EXAMINER
Joseph M. Sauer, Esq.	PHAM, TUAN

ART UNIT	PAPER NUMBER
2643	

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DATE MAILED: 12/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/004,001	ZHAO ET AL.
	Examiner	Art Unit
	TUAN A. PHAM	2643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *06 October 2005*.

2a) ☒ This action is **FINAL.**   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-37* is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-10, 12, 14-15, 18, and 27-37* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a) ☐ All   b) ☐ Some * c) ☐ None of:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____.

        3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments filed on 10/06/2005 have been fully considered but they are not persuasive.

In response to applicant's remark on page 9, Applicant argues that there is no motivation to combine of Dayton's reference and Goodwin's reference.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the reference. Rather, the test is what the combined teaching of the references would have suggested to those of ordinary skill in the art. Dayton teaches a portable terminal including a multifunction keyboard to support multi-mode such as dialer mode, calculator mode, and edit mode. On the other hand, Goodwin teaches a tactile feedback keyboard to have the user select a desirable keyboard profile and to cause the processor in the alternative may automatically select a profile, which varies given the requirement of a particular

application executing on the processor. Therefore, there is a motivation to combine the

teaching of Goodwin in to view of Dayton in order to provide the multifunction and

selecting plurality of software application to keyboard.

In response to applicant's remark on page 10, Applicant argues that the Dayton's

reference does not teaches "accessing the service store memory location to detect

whether the telephony mode or the data mode is associated with the active application",

in claim 18.

In response to applicant's arguments as stated above, the examiner respectfully

disagrees with the applicant's argument. Dayton teaches accessing the service store

memory location to detect whether the telephony mode or the data mode is associated

with the active application (see figures 4-8, 11, memory 52, controller 50, conversion

table, col.5, ln.1-15, col.6, ln.2-67, e.g., keyboard 26 is supporting three different modes,

each mode is associated with different software application. When the user select the

telephone mode from the keyboard, the controller automatically run on the telephone

software application, and when the user select the calculator mode, the controller

automatically run on calculator software application, and it is inherently that in Dayton

reference the software application store in the controller for supporting different modes).

In response to applicant's remark on page 11, Applicant argues that the Dayton's

reference does not teaches "wherein the keyboard mode control software module

automatically determines whether the keyboard output signals from the plurality of keys

are converted into character codes or telephony tone signals based on a keyboard

mode that is associated with an active software program", in claim 30.

In response to applicant's arguments as stated above, the examiner respectfully

disagrees with the applicant's argument. Dayton teaches the keyboard mode control

software module automatically determines whether the keyboard output signals from the

plurality of keys are converted into character codes or telephony tone signals based on

a keyboard mode that is associated with an active software program (see figures 4-8,

11, memory 52, controller 50, conversion table, col.5, ln.1-15, col.6, ln.2-67, e.g.,

keyboard 26 is supporting three different modes, each mode is associated with different

software application. When the user select the telephone mode from the keyboard, the

controller automatically run on the telephone software application, and when the user

select the calculator mode, the controller automatically run on calculator software

application).

Base on the above rational, it is believed that the claimed limitations are met by

the combination of Dayton and Goodwin and therefore, the rejection are still maintained.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the
United States before the invention thereof by the applicant for patent, or on an international application
by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this
title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act

of 1999 (AIPA) and the Intellectual Property and High Technology Technical

Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting

directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior

to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3.   **Claims 1-12 are rejected under 35 U.S.C. 102(e) as being anticipated by**

Dayton et al. (U.S. Patent No.: 4,799,254, Hereinafter, "Dayton").

Regarding claim 1, Dayton teaches a method and communication device (see

figure 8), comprising:

a multifunctional keyboard having a plurality of letter keys, wherein each letter

key is configured to generate a keyboard output signal (see figure 4, key board 26 with

plurality of key with letter, col.7, ln.22-35);

a processor coupled to the multifunctional keyboard that is configured to convert

each keyboard output signal generated by the letter keys into a character code (see

figure 8, controller 50, col.5, ln.5-15, figure 11, col.8, ln.3-29);

means for converting each keyboard output signal generated by the letter keys

into a telephony tone signal (see figure 8, figure 11, controller 50, col.8, ln.2-29);

a keyboard mode control software module operating on the processor that

controls whether the keyboard output signals from the letter keys are converted into

character codes or telephony tone signals from the letter key are converted into

character codes or telephony tone signals (see figure 8, controller 50, col.5, ln.5-15,

figure 11, col.8, ln.3-29, keyboard 26 is supporting three different modes, each mode is

associated with different software application. When the user select the telephone

mode from the keyboard, the controller automatically run on the telephone software

application, and when the user select the calculator mode, the controller automatically

run on calculator software application);

a plurality of software applications stored in a memory of the communication

device and executed by the processor, the plurality of software applications each having

an associated keyboard mode (see figure 8, controller 50, col.5, ln.5-15, figure 11, col.8,

ln.3-29, controller 50 store plurality of application to support multiple mode. Keyboard

26 is supporting three different modes, each mode is associated with different software

application. When the user select the telephone mode from the keyboard, the controller

automatically run on the telephone software application, and when the user select the

calculator mode, the controller automatically run on calculator software application, and

it is inherently that in Dayton reference the software application store in the controller for

supporting different modes);

the keyboard mode control software module automatically determining whether

the keyboard output signals from the letter keys are to be converted into character

codes or telephony tone signals, depending on which one of the plurality of software

applications is active (see figure 8, controller 50, col.5, ln.5-15, figure 11, col.8, ln.3-29,

controller 50 store plurality of applications to support multiple mode. Keyboard 26 is

supporting three different modes, each mode is associated with different software

application. When the user select the telephone mode from the keyboard, the controller

automatically run on the telephone software application, and when the user select the

calculator mode, the controller automatically run on calculator software application).

Regarding claim 2, Dayton further teaches the communication device wherein

the multifunctional keyboard is a QWERTY style keyboard (see col.4, ln.60-62).

Regarding claim 3, Dayton further teaches the communication device wherein

the converting means is the processor (see col.5, ln.1-15).

Regarding claim 4, Dayton further teaches the communication device wherein

the converting means is a tone signal generator (see figure 8, DTMF generator 53).

Regarding claim 5, Dayton further teaches the method and communication

device wherein the tone signal generator also generates an audible tone when one of

the letter keys is pressed (see col.9, ln.20-26).

Regarding claim 6, Dayton further teaches the communication device wherein

the keyboard mode control software module also controls whether the keyboard output

signals from the letter keys are converted into both character codes and telephony tone

signals (see figure 8, figure 11, col.8, ln.3-29).

Regarding claim 7, Dayton further teaches the communication device wherein

the telephony tone signal generated for each letter key corresponds to an integer

ranging from two (2) to nine (9) (see col.5, ln.25-30).

Regarding claim 8, Dayton further teaches the communication device wherein

the telephony tone signals are Dual Tone Multi Frequency (DTMF) signals (see col.6,

ln.2-18).

Regarding claim 9, Dayton further teaches the communication device wherein the character codes are American Standard Code for Information Interchange (ASCII) character codes (see figure 11, col.6, ln.60-64).

Regarding claim 10, Dayton further teaches the communication device wherein the plurality of keys on the multifunctional keyboard also includes a plurality of number keys, each of which is configured to generate a keyboard output signals; the processor is also configured to convert the keyboard output signals generated by the number keys into character codes; the converting means also converts the keyboard output signals generated by the number keys into telephony tone signals; and the keyboard mode control software also controls whether the keyboard output signals from the number keys are converted into character codes or telephony tone signals (see figure 4, key board 26 with plurality of key with letter, col.7, ln.22-35, see figure 8, figure 11, controller 50, col.8, ln.2-29).

Regarding claim 12, Dayton further teaches the communication device wherein the memory is coupled to the processor and includes a service store memory location that associates each software application with the associated a keyboard mode active (see figure 8, controller 50, col.5, ln.5-15, figure 11, col.8, ln.3-29, controller 50 store plurality of applications to support multiple mode).

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

5.   **Claims 18, 27-35 are rejected under 35 U.S.C. 103(a) as being unpatentable**

over Dayton et al. (U.S. Patent No.: 4,799,254, Hereinafter, "Dayton") in view of

Goodwin et al. (U.S. Patent No.: 6,218,966, hereinafter, "Goodwin").

Regarding claims 18, and 30, Dayton teaches a method and communication

device (see figure 8), comprising:

a multifunctional keyboard having a plurality of letter keys, wherein each letter

key is configured to generate a keyboard output signal (see figure 4, key board 26 with

plurality of key with letter, col.7, ln.22-35);

a processor coupled to the multifunctional keyboard that is configured to convert

each keyboard output signal generated by the letter keys into a character code (see

figure 8, controller 50, col.5, ln.5-15, figure 11, col.8, ln.3-29);

means for converting each keyboard output signal generated by the letter keys

into a telephony tone signal (see figure 8, figure 11, controller 50, col.8, ln.2-29);

a keyboard mode control software module (read on stored instruction) operating

on the processor that controls whether the keyboard output signals from the letter keys

are converted into character codes or telephony tone signals from the letter key are

converted into character codes or telephony tone signals (see figure 8, controller 50,

col.5, ln.5-15, figure 11, col.8, ln.3-29, keyboard 26 is supporting three different modes,

each mode is associated with different software application. When the user select the

telephone mode from the keyboard, the controller automatically run on the telephone

software application, and when the user select the calculator mode, the controller

automatically run on calculator software application).

It should be noticed that Dayton fails to teach a plurality of software applications

stored in a memory of the communication device and executed by the processor, the

plurality of software applications each having an associated keyboard mode; the

keyboard mode control software module being operable to automatically determine the

keyboard mode associated with an active one of the plurality of software applications,

wherein the keyboard mode is used by the keyboard mode control software module to

automatically determine whether the keyboard output signals from the letter keys.

However, Goodwin teaches such features (see col.7, ln.15-32, it is inherently that the

word processor program is stored in the memory, and a keyboard mode control

software module is build-in the CPU 14).

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to incorporate the teaching of Goodwin into view of Dayton

in order to provide the multifunction and selecting plurality of software application to

keyboard.

Regarding claim 27, Dayton further teaches the method and communication

device wherein the tone signal generator also generates an audible tone when one of

the letter keys is pressed (see col.9, ln.20-26).

Regarding claim 28, Dayton further teaches the communication device wherein

the audible tone may be enabled or disabled by a communication device user. It is

obvious the user can disable or enable the audio tone whenever they want.

Regarding claim 29, Dayton further teaches the communication device wherein

the audible tone generated while the communication device is executing the telephony

mode is different from the audible tone generated while the communication device is

executing the data mode (see col.5, ln.15-34, the DTMF tone should be different from

ASCII tone).

Regarding claim 31, Dayton further teaches the communication device wherein

the multifunctional keyboard is a QWERTY style keyboard (see col.4, ln.60-62).

Regarding claim 32, Dayton further teaches the communication device wherein

the converting means is the processor (see col.5, ln.1-15).

Regarding claim 33, Dayton further teaches the communication device wherein the converting means is a tone signal generator (see figure 8, DTMF generator 53).

Regarding claim 34, Dayton further teaches the communication device wherein the telephony tone signals are Dual Tone Multi Frequency (DTMF) signals (see col.6, ln.2-18).

Regarding claim 35, Dayton further teaches the communication device wherein the character codes are American Standard Code for Information Interchange (ASCII) character codes (see figure 11, col.6, ln.60-64).

6.   Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dayton et al. (U.S. Patent No.: 4,799,254, Hereinafter, "Dayton") in view of Miller (U.S. Patent No.: 5,660,488).

Regarding claim 14, Dayton teaches a method and communication device (see figure 8), comprising:

a multifunctional keyboard having a plurality of letter keys, wherein each letter key is configured to generate a keyboard output signal (see figure 4, key board 26 with plurality of key with letter, col.7, ln.22-35);

a processor coupled to the multifunctional keyboard that is configured to convert each keyboard output signal generated by the letter keys into a character code (see figure 8, controller 50, col.5, ln.5-15, figure 11, col.8, ln.3-29);

means for converting each keyboard output signal generated by the letter keys into a telephony tone signal (see figure 8, figure 11, controller 50, col.8, ln.2-29);

a keyboard mode control software module operating on the processor that

controls whether the keyboard output signals from the letter keys are converted into

character codes or telephony tone signals from the letter key are converted into

character codes or telephony tone signals (see figure 8, controller 50, col.5, ln.5-15,

figure 11, col.8, ln.3-29, keyboard 26 is supporting three different modes, each mode is

associated with different software application. When the user select the telephone

mode from the keyboard, the controller automatically run on the telephone software

application, and when the user select the calculator mode, the controller automatically

run on calculator software application);

a plurality of software applications stored in a memory of the communication

device and executed by the processor, the plurality of software applications each having

an associated keyboard mode (see figure 8, controller 50, col.5, ln.5-15, figure 11, col.8,

ln.3-29, controller 50 store plurality of application to support multiple mode. Keyboard

26 is supporting three different modes, each mode is associated with different software

application. When the user select the telephone mode from the keyboard, the controller

automatically run on the telephone software application, and when the user select the

calculator mode, the controller automatically run on calculator software application);

the keyboard mode control software module automatically determining whether

the keyboard output signals from the letter keys are to be converted into character

codes or telephony tone signals, depending on which one of the plurality of software

applications is active (see figure 8, controller 50, col.5, ln.5-15, figure 11, col.8, ln.3-29,

controller 50 store plurality of applications to support multiple mode. Keyboard 26 is

supporting three different modes, each mode is associated with different software application. When the user select the telephone mode from the keyboard, the controller automatically run on the telephone software application, and when the user select the calculator mode, the controller automatically run on calculator software application).

It should be noticed that Dayton fails to teach the communication device wherein the multifunctional keyboard is uniformly distributed across a housing of the communication device such that one half of the letter keys are located on a left-hand side of the housing and the remaining letter keys are located on a right-hand side of the housing. However, Miller teaches such features (see figure 4, keyboard 440).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Miller, into view of Dayton in order to conveniently operate the keyboard.

Regarding claim 15, Miller further teaches the communication device wherein the letter keys on the left-hand side of the housing are tilted at a negative angle from vertical and the letter keys on the right-hand side of the housing are tilted at a positive angle from vertical (see figure 4, keyboard 440).

7.   **Claims 36-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dayton et al. (U.S. Patent No.: 4,799,254, Hereinafter, "Dayton") in view of Goodwin et al. (U.S. Patent No.: 6,218,966, hereinafter, "Goodwin") as applied to claims 1 and 30 above, and further in view of Miller (U.S. Patent No.: 5,660,488).**

Regarding claim 36, Dayton and Goodwin, in combination, fails to teach the

communication device wherein the multifunctional keyboard is uniformly distributed

across a housing of the communication device such that one half of the letter keys are

located on a left-hand side of the housing and the remaining letter keys are located on a

right-hand side of the housing. However, Miller teaches such features (see figure 4,

keyboard 440).

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to incorporate the teaching of Miller, into view of Dayton

and Goodwin in order to conveniently operate the keyboard.

Regarding claim 37, Miller further teaches the communication device wherein

the letter keys on the left-hand side of the housing are tilted at a negative angle from

vertical and the letter keys on the right-hand side of the housing are tilted at a positive

angle from vertical (see figure 4, keyboard 440).

Conclusion

8.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

9.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to **Tuan A. Pham** whose telephone number is

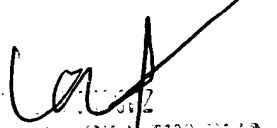(571) 272-8097. The examiner can normally be reached on Monday through Friday,

8:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Mr. Curtis Kuntz can be reached on (571) 272-7499 and

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Art Unit 2643
December 14, 2005
Examiner

Tuan Pham